Naval Research Laboratory
Environmental Quality Sciences

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Chemistry Division
U.S. Naval Research Laboratory

Ecosystem-Level Evaluation of Contaminated Watersheds

Most Naval facilities are located in coastal waterways and are typically located in industrialized or urban centers. A combination of past and current naval operations and non-naval industrial activities impact local ecosystems by exposure to a variety of hydrocarbon and metal contaminants.

Restoration of these contaminated sites is a top priority of the Naval environmental community as well as federal, state, and local regulators and stakeholders. Researchers at the Naval Research Laboratory, in collaboration with several university scientists have been studying the effects of hydrocarbon and metal contamination in these ecosystems.

In areas that have been impacted over a number of years, there is evidence of enhanced contaminant degradation by naturally occurring bacteria in the sediment and overlying water column. When the degradation rate of a given contaminant matches or exceeds its flux into the impacted area, it may be unnecessary to employ expensive remediation treatments because adjacent ecosystems are not being significantly affected.

This work focuses on biodegradation and transport of contaminants to adjacent ecosystems. Where appropriate, intrinsic bioremediation can be an ecological and economical prudent alternative to dredging or other treatment strategies (e.g., capping).

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